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ABSTRACT

Demographic, social, and economic factors are shaping the future environment and clientele of California's adult education system. Continued population growth means adult education will have to serve larger populations. Direct implications of increasing ethnic and racial pluralism are demands for more flexible delivery systems that accommodate cultural diversity and demands by English-speaking persons to study a second language. Implications of an aging population are competition for resources, special systems for educational delivery, and a shortage of adult education teachers. The rise in the numbers of working and single parents has important implications for adult education: accessibility and need for classes on parenting and domestic skills. Changes in the labor market and world of work will create needs to increase the skills of adult workers, offer recurring job training, and provide resources to help workers cope with career change and job displacement. Trends concerning educational attainment and skill deficiencies point to roles for adult education in providing literacy, basic education, and upgrading. Two new public policy initiatives, the Immigration Reform and Control Act and Greater Avenues for Independence welfare reform program, will increase demand for programs in adult basic education and English as a Second Language. Two special groups are likely to place increasing demands on adult education: prison inmates and parolees and disabled adults. (YLB)

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Adult Education Needs for a Changing State

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Discussion Paper on Long-term Adult Education and Training Needs in California

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California Department of Education • Bill Honig, State Superintendent of Public Instruction
Sacramento, 1992

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Adult Education Needs for a Changing State

Discussion Paper on Long-term Adult Education and Training Needs in California

Submitted to:
Adult Education Unit
California Department of Education

Prepared by:
Fred Best, Ph.D.
Pacific Management and Research Associates

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Letter of Transmittal

This paper has been prepared to provide background on the varied needs for adult education in the twenty-first century. Specifically, it is intended as a discussion piece for a Special Committee on Adult Education appointed by State Superintendent Bill Honig. This committee is charged with developing a long-term strategic plan for California's adult education system.

The primary goal of this paper is to identify key demographic, economic, and social trends that will impact the need for adult education among the California population. Deliberate efforts have been made to avoid discussions of policy and program responses to those trends. This has been done to catalyze discussion of, and hopefully agreement on, educational needs so that subsequent policy discussions reflect broad-based social and economic needs rather than current institutional perspectives.

This paper is a working document. It does not necessarily represent the views or policies of the Department of Education or the Adult Education Advisory Committee. Its contents will be revised and augmented in accord with review by the Advisory Committee and subsequent research, and ultimately it will be integrated into a long-term plan.

Sincerely,

Fred Best
President
Pacific Management
and Research Associates

Special Committee on Adult Education and Project Staff

Committee Members

Rena M. Bancroft, President, San Francisco Community College Centers
Robert Benbow, Chair, Association of California School Administrators, Adult Education Committee, Baldwin Park
Mary Lou Browning, Detention Education Program, Contra Costa County Office of Education, Pleasant Hill
Roslyn Elms, Academic Assistant to the Vice-Chancellor, University of California, Berkeley
Jean F. Estes, Member-at-Large, Retired Adult Educator, Claremont
James Figueroa, Adult and Occupational Education, Los Angeles Unified School District
Ronald K. Gristock, Vice-President, Wells Fargo Bank, San Francisco
Wilfred M. Hopp, Director, Simi Valley Adult School
Lynn Hung, Assistant to the Vice-President, Levi Strauss Corporation, San Francisco
Percy Julien, Director, Adult Education, Oakland Unified School District
Darlene Laval, Board of Education, Fresno Unified School District
Frances Lee, CATESOL Representative; and Associate Dean, San Diego Community College District
Albert Lizee, Adult Business Education Teacher, Riverside Unified School District
Hazel W. Mahone, Superintendent, Grant Joint Union High School District, Sacramento
Cuba Miller, Assistant Director, Sequoia District Adult School, Redwood City

Bonnie Oliver, Director of Special Projects, Educational Enterprise Division, KCET-TV, Los Angeles
Henry Page, Principal, Palo Alto Adult School
Corinne Price, Director, Salinas Adult School
Leonard Rivera, Principal, Whittier Adult School
Prany Sananikone, Assistant Director, United Cambodian Community, Inc., Long Beach
Juanita Stanley, Executive Director, California Literacy, Inc., San Gabriel
William Stitt, President, California Council for Adult Education (CCAE), Vacaville
Gary E. Strong, State Librarian, California State Library, Sacramento
Anthony J. Trujillo, Superintendent, Sweetwater Union High School District, Chula Vista
Diane Welch Vines, Director of Special Programs, The California State University, Long Beach
Ligaya Vopata, English-as-a Second-Language and Citizenship Teacher, Visalia Adult School

State-Level Educational Staff

Gerald Kilbert, State Director, Adult Education
Ray Eberhard, Program Administrator, Adult Education Unit
Norma Morris, Academic Standards, Chancellor's Office, California Community Colleges
Lynda Smith, Project Monitor, Adult Education Unit

Consultant Staff, Pacific Management and Research Associates

Fred Best, Project Director
Barry Stern, Senior Associate
Mary O'Mara, Project Manager
Victor Chow, Associate
Bernadette Dawson, Associate

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Victor Chow, Pacific Management and Research Associates
John Church, Youth, Adult, and Alternative Educational Services, California Department of Education
Larry Clark, California Employment Development Department
Juliet Crutchfield, Adult Education Unit, California Department of Education
Donald Dixon, SRA Associates
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Jim Lindberg, Adult Education Unit, California Department of Education
Rich Lovelady, Population Research Unit, California Department of Finance
Bob Oliphant, Local Assistance Bureau, California Department of Education
Mary O'Mara, Pacific Management and Research Associates
Pat Parnell, California Department of Developmental Services
Dale Rezabek, Chancellor's Office, California Community Colleges
Edward Schneider, Andrus Gerontology Center, University of Southern California
Ernestine Schnuelle, Los Angeles Hall of Justice
Barry Stern, Pacific Management and Research Associates
Dick Stiles, Immigration Reform and Control Act Unit, California Department of Education
Merrill Vargo, SRA Associates
Jim White, California Department of Developmental Services
Gail Zittel, Adult Education Unit, California Department of Education

The contents of this paper do not necessarily reflect the views of the above persons or the institutions they represent.

I. Introduction

Strategic planning is best approached by taking a broad look at environmental trends before dealing with institutional policies and issues. Using trends to speculate about the future has dangers. But the dangers of not attempting to forecast the future systematically are greater.

Through the end of this decade and into the twenty-first century, California will be swept into a typhoon of intensifying economic and social change. Existing challenges will be compounded by new departures and reversals of conditions that have long been taken for granted. These multiple waves of change will require new and intensified responses from individuals and the institutions that serve them.

Adult education will continue to be called on to help California's population prepare for the demands of the future. This is not a new role. In the past, adult education has played lead roles in naturalizing the nation's immigrant populations, training workers for the mobilization efforts of two world wars, and meeting the diverse educational needs of America's most pluralistic state. New challenges will continue to require leadership for educators of adults. However, these challenges will require rethinking of the types of education to be provided and the ways that it will be delivered.

Assessing Needs Without Jumping to Action

This paper was prepared to identify long-term needs and opportunities for adult education. It suggests the implications of long-term social changes for adult education, but it does not propose specific actions or institutional arrangements.

The reason for deferring discussion of institutional responses is straightforward. It is important to put the adult education needs of the people of California before existing institutional perspectives. A rush to action and policy discussion frequently can obscure the social and economic needs which must be addressed.

Clearly, specific actions and institutional responses are necessary. Indeed, they are the ultimate end of the analysis reflected in this paper. However, readers are

urged to resist the temptation to jump to action; instead, they should use this paper to develop consensus about trends and changes that should guide action. Over the long run, a clear understanding and agreement about long-term needs will establish a foundation for planning a strong and valuable system of adult education.

Looking to the Future with a Cautionary Note

There are dangers in forecasting the future and making long-term plans. Literature on social forecasting is filled with cases of mistaken predictions. In the 1930s C. C. Furnas wrote a wide-scoped and largely accurate forecast of the next 50 years but totally neglected the possibility of atomic energy. In the 1960s Ithiel DeSola Pool prepared a widely accepted international forecast in which the United States won the war in Vietnam and Lyndon Johnson was overwhelmingly reelected in 1968. Even rigorous quantitative projections can have shortcomings. Econometric analyses constructed by some of our finest minds frequently miss the advent of recessions.

Conversely, literature on social forecasting also provides exemplary cases of success. Employment projections developed by the federal Bureau of Labor Statistics have rarely been totally precise, but they have not failed in forecasting the direction and general magnitude of change. Similarly, population projections by the government are commonly very accurate. And contrary to the above experience of DeSola Pool, one who uses sound judgment based on good and complete facts can foresee the future.

There are lessons to be learned from the varied successes of forecasting. First and foremost, some things are more predictable than others. Given the absence of wars and natural catastrophes, forecasts about population growth and demographic characteristics are commonly far more accurate than predictions of social values and specific technological breakthroughs. Second, predictions based on facts and established trends tend to be more reliable than those based on judgment.

Established trends can be reversed, but they provide a firmer foundation for forecasting than anecdotal evidence and judgments clouded by personal values and hopes. Third, short-term forecasts have much greater reliability than long-term forecasts. Even projections based on the most rigorous analysis of accurate trend data can prove woefully inaccurate over the course of a few decades. Finally, in terms of long-term planning, the advice of one experienced practitioner may be of great value: Plan with a long-term perspective, but always be in the first year of your long-term plan. In other words, know where you are going over the long run, but constantly reassess your assumptions.

Despite the errors and risks of forecasting and long-term planning, the dangers of ignoring trends and failing to speculate about their future impacts carry far greater risk. Errors notwithstanding, planners can tell something about the future, or at least postulate the most likely of possible futures. Forecasting enables planners to anticipate problems and opportunities and in many cases to prevent crises that can be avoided.

More important, attention to the future enables planners to seize opportunities and take actions to control rather than respond to events. The future will be not only an unraveling of existing trends but also the result of the actions of individuals and institutions interacting with trends and novel events. Through attention to the future, the future can be created and shaped.

II. Changing Needs for a Changing State

Significant social and economic changes will dramatically alter the nature of California's population and require educational institutions to recast both the content and delivery of adult education.

This paper provides an overview of the key trends and changes that will impact California's adult education system in the first two decades of the twenty-first century. Eight key areas of change will be discussed:

1. Population growth
2. Racial and ethnic pluralism
3. The aging population
4. Changes in family life and parenthood
5. Work and the labor force
6. Education and skills
7. New public policies
8. Special groups and trends

These eight areas of social and economic change do not reflect all the areas and issues that will impact adult education. Nor do they include unpredictable events such as wars and natural catastrophes that can radically alter the needs and priorities of a society. The above eight areas do represent identified trends and developments which have been documented by facts. Predictions in these eight areas can be made with some degree of accuracy, and those predictions can provide a foundation for long-term planning.

Continued Population Growth

Population growth in California will continue, but at declining rates. Most of this growth will come from immigration and will occur unevenly among California's 58 counties.

Size of Future Population

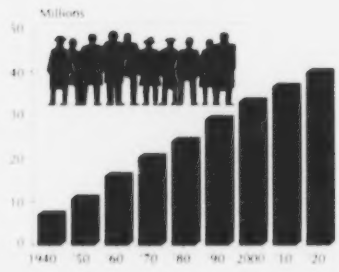
In absolute numbers the growth of California's population will be phenomenal. Between 1980 and 2020, the state's population is expected to increase some 67 percent, from 23.8 million to 39.6 million persons (see Exhibit 1). California, already the nation's most populous state, will also become one of the more densely populated states. Specifically, population density will almost double between 1970 and 2020 from 128 to 253 people per square mile.[1]

Rate of Population Growth

Despite the addition of 16 million people between 1980 and 2020, most forecasters expect California's

Exhibit 1

California's Population, 1940–2020



Source: California Department of Finance, Demographics Unit, Sacramento, November, 1988.

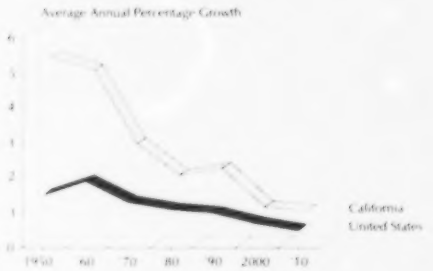
1. *Statistical Abstracts of the United States, 1988.* Washington, D.C.: Bureau of the Census, 1988, Table 21, pp. 18 and 19.

growth rate to decline significantly. Specifically, the California Department of Finance projects the state's average annual population growth rate to decline from the 1.9 percent for the 1970–1980 period to 0.9 percent during the 2000–2010 decade. While the growth rate's decline is notable, it is minor compared to the rate of decline from 5.3 percent to 1.9 percent between the decades of 1940–1950 and 1970–1980.

While population growth rates will decline notably, California's growth rates will still be significantly higher than the national average. Average annual growth rates for the nation are expected to be 0.7 and 0.5 percent, respectively, for the decades of 1990–2000 and 2000–2010 compared to California's growth rates of 1.0 and 0.9 percent for the same decades (see Exhibit 2).

Exhibit 2

Comparison of Population Growth Rates, California and the United States



Source: California Department of Finance, Demographics Unit, Sacramento, November, 1988; *Statistical Abstracts of the United States, 1988.* Washington, D.C.: Bureau of the Census, 1988, tables 1 and 27, pp. 7 and 23.

Sources of Population Growth

Population growth during the next two decades is expected to be split between natural increases and net gains resulting from immigration. During the period of 1970 through 1985, population growth was split almost evenly between these two sources.[2]

Projections to the year 2040, however, indicate that population growth in California will come progressively from immigration, most of which will take the form of emigration from other countries. Over the next five decades, "natural" population increases resulting from the net difference between births and deaths are expected to dissipate to a replacement level.[3] Under such conditions population growth will increasingly result from net migration into the state. While unforeseen political and economic conditions may alter current forecasts, it is expected that most of this growth will involve legal and illegal immigrants who come directly from other nations or indirectly through other states.[4]

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2. *California Statistical Abstracts, 1987.* Sacramento: California Department of Finance, 1988, Table B-1, p. 12.

3. Natural population growth resulting from births minus deaths is expected to approach a replacement rate for two reasons. First, fertility rates are expected to decline gradually among all racial-ethnic groups to below replacement level. Second, the age distribution of the population will be shifted to older groups, creating a situation in which deaths will more evenly counterbalance births. (Leon F. Bouvier and Philip L. Martin, *Population Change and California's Educational System.* Washington, D.C.: Population Reference Bureau, 1988, pp. 59–62.)

4. Bouvier and Martin, *Population Change,* p. 15.

Geographic Distribution of Population Growth

Population growth will not be even across the state. Lake County, the fastest growing county, will experience a 47 percent population increase between 1988 and 1997. In contrast the population of Marin County, the slowest growth area, will increase only 3 percent. For the most part, the most heavily populated counties of today are not expected to be the most rapidly growing counties of the next decade. The counties with the highest growth rates tend to be today's low-population counties. These counties will grow rapidly, but they will not rival the major population clusters of the Los Angeles basin, the San Francisco Bay Area, San Diego, and Sacramento. The 11 counties projected to be the largest in 1997 essentially represent these four population clusters. A decade from now their populations will constitute 73 percent of the state's population (see Exhibit 3).

Implications for Adult Education

The population bases for all California counties will continue to grow, some at remarkable rates. All else held constant, this will mean that adult education will have to serve larger populations. In the case of small but rapidly growing counties, high growth rates may put considerable pressures on adult schools to expand and adjust their programs to meet the demands of their changing populations. This may be particularly true for small counties with no existing adult education systems.

Population growth provides a context for assessing the demands to be placed on adult education. However, the characteristics of California's growing population will be more important than the sheer size of its population. California's population is changing in composition as well as size, and these changes are likely to place new and greater demands on adult education.

Increasing Ethnic and Racial Pluralism

One of the most profound changes occurring in California's population is its headlong rush toward becoming the nation's first balanced multicultural state. Four great cultures and a multitude of ethnic groups are converging to create a society in which no culture or

Exhibit 3
Population Growth Rates of California's Counties, 1978–1987 and 1988–1997

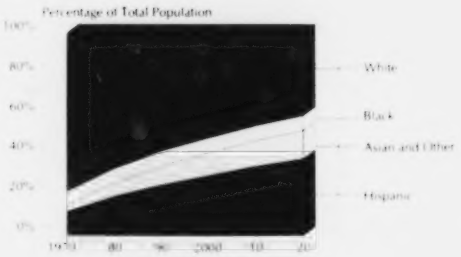
County	Actual percent of growth 1978–1987	Projected percent of growth 1988–1997	Projected population 1997
Lake	70	47	74,800
Nevada	83	42	104,900
San Luis Obispo	44	39	281,200
Amador	56	37	34,700
Mariposa	51	36	19,000
San Benito	44	36	45,300
Riverside*	58	36	1,246,500
Tuolumne	56	35	60,500
Madera	50	35	107,800
Calaveras	74	34	39,800
Merced	32	34	222,200
El Dorado	67	31	148,100
Placer	47	29	190,800
San Joaquin	41	29	575,000
San Bernardino*	58	29	1,549,900
Kings	22	28	112,400
Tulare	28	27	370,100
Shasta	34	26	170,600
Alpine	33	25	1,500
Colusa	15	25	18,500
Imperial	26	25	136,200
Tehama	33	24	56,800
Butte	30	24	210,300
Solano	47	24	368,900
Kern	35	24	626,400
Santa Cruz	29	22	272,800
Stanislaus	33	21	395,600
Modoc	13	20	11,200
Trinity	27	20	16,300
Monterey	23	19	407,700
Ventura*	32	19	750,100
Sacramento*	30	19	1,128,800
San Diego*	34	19	2,720,600
Sierra	13	18	4,000
Glenn	14	18	27,100
Mendocino	22	18	88,800
Fresno	23	18	703,400
Sonoma	30	17	412,700
Plumas	31	16	22,900
Sutter	23	16	69,800
Santa Barbara	18	16	397,300
Yolo	19	14	147,100
Orange*	22	14	2,520,300
Napa	11	13	119,300
Contra Costa*	20	13	843,900
Santa Clara*	15	13	1,599,300
Mono	24	12	10,300
Yuba	17	11	61,700
Alameda*	11	9	1,340,000
Lassen	37	8	28,500
Siskiyou	17	8	46,400
Del Norte	15	6	20,600
Los Angeles*	17	6	8,990,400
Humboldt	6	5	119,500
San Mateo	7	5	653,900
San Francisco*	8	5	776,300
Inyo	1	4	18,800
Marin	2	3	235,500
Total state:	23.8	14.7	31,733,100

Source: California Department of Finance, Sacramento, November, 1988.
*One of the 11 counties projected to have the largest populations in 1997.

race is the majority. California is well on the way to becoming a society shared by a people with roots deeply linked to Asian, black, white, and Hispanic heritages.

Exhibit 4

Ethnic-Racial Composition of California's Population, 1970–2020



Source: California Department of Finance, Sacramento, November, 1988.

An Overview of Tomorrow's Ethnic-Racial Pluralism

Trends and projections provide a vivid picture of a profound march toward ethnic and racial pluralism. Specifically, the percent of the California population that is white and presumably of Anglo background is projected to decline from a majority of 78 percent to a minority of 40.6 percent between 1970 and 2020. As the white population shifts to minority status, it will not be replaced by a single majority ethnic-racial group. Rather, other ethnic and racial groups will emerge as larger minorities. Specifically, the California population in the year 2020 will be composed of 40.6 percent white, 7.5 percent black, 37.7 percent Hispanic, and 14.2 percent Asian and other ethnic-racial groups (see Exhibit 4).

Origins of Ethnic-Racial Transition

The root of this projected transformation of California's ethnic and racial makeup stems from a tidal wave of foreign immigration and higher-than-average birthrates among most emigrant populations once they arrive in California.

In a recent study by the Population Reference Bureau, it was estimated that for the foreseeable future there will be a net legal and illegal immigration of 190,000 persons a year. Approximately 35 percent of this inflow is estimated to be illegal, mostly from Mexico.[5] This translates to a population increase of 1.9 million every decade from immigration alone, a figure accounting for half of the previously reported population growth of the 1980–1990 decade. The Population Reference Bureau's study reports that this estimate is "conservative," and other studies have estimated a much larger population growth from immigration.[6] This

5. Bouvier and Martin, *Population Change*, pp. 15–17 and 59–62.

6. One study estimates that more than one million immigrants entered California illegally during the 1970s, a figure accounting for an annual average of over 100,000 (Thomas Muller, *The Fourth Wave: California's Newest Immigrants*, Washington, D.C.: The Urban Institute, 1984, p. 6).

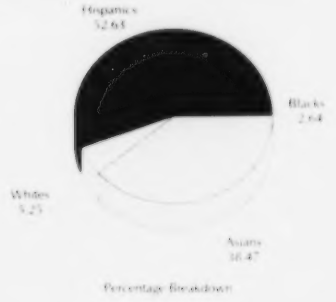
study also estimates that 53 percent of this immigration will consist of people of Hispanic origins, two-thirds of whom will come from Mexico. Some 39 percent are expected to come from Asian nations, most notably Vietnam, China, Korea, and the Philippines (see Exhibit 5).

The impact of immigration on California's population does not end with the arrival of foreigners. The birthrates of recently immigrated populations are commonly higher than those of the native population. The Population Reference Bureau's study estimates that fertility rates for the native white population average 1.7 children per woman. Fertility rates for blacks and Hispanics are estimated to be 2.3 and 3.0, respectively. Asians, who vary by country of origin, average over 2.0.[7] This variation of fertility rates is expected to converge to fewer than 2.0 by the year 2030. In the meantime the combined impacts of higher birthrates among nonwhite ethnic and racial groups and direct immigration will fuel the shift toward a pluralistic future (see Exhibit 6).[8] More specifically, by the year 2000 one quarter of all California Hispanics and almost half of all Asians between ages 3 and 24 will be immigrants or the children of immigrants who came to the state after 1980.

The impact of immigration on California's ethnic-racial makeup promises to be without parallel in U.S. history. World wars and the passage of restrictive legislation cut and regulated population growth from immigration. Such legislation and regulations have allowed time for immigrants' assimilation and social adjustment. Today, however, legal and illegal immigration to California is different. There is no end in sight, and there will be no rest periods as different cultures learn to live with each other.

Exhibit 5

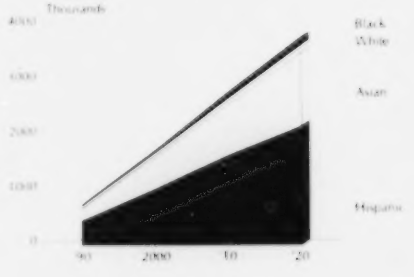
Ethnic-Racial Classification of Immigration into California



Source: Bouvier and Martin, *Population Change.*

Exhibit 6

Post-1980 Immigrants and Descendents in California's Population



Source: Bouvier and Martin, *Population Change.*

Implications for Adult Education

The impact of California's changing ethnic-racial profile on adult education is likely to be more indirect than direct. Critical indirect impacts will stem from differences in educational achievement among nonwhite ethnic-racial groups and high rates of deficiency with English among Asian and Hispanic groups.

7. Bouvier and Martin, *Population Change*, p. 59.
8. Bouvier and Martin, *Population Change*, pp. 15–16.

These impacts will be discussed in a later section dealing with skills and English proficiency. Another impact will stem from the massive effort to naturalize illegal immigrants under the Immigration Reform and Control Act (IRCA). This will also be discussed later. The direct impacts are likely to stem from cultural differences among ethnic-racial groups. Growing diversity will create new demands for effective and flexible methods for delivering adult education services. Finally, California's growing cultural diversity may cause many native English-speaking persons to study a second language.

An Aging Population

Changes in age distribution of California's population promise to be as significant as the push toward ethnic and racial pluralism. The average age of California's population is increasing as a large and healthy "baby boom" generation grows older. Coming years will see the proportion of persons over age 65 swell, most likely to a proportion significantly greater than those of most forecasts. This trend will place great strains on society's institutions, including those of adult education.

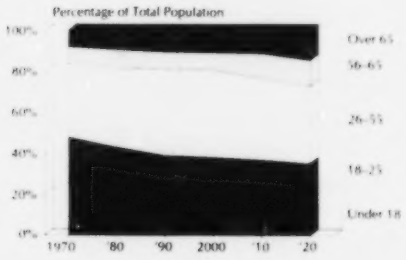
Profile of an Aging Population

Demographic conditions set in motion by birthrates of past decades will cause California's population to be skewed increasingly toward an aging work force and ultimately toward a disproportionately large retirement population. The large post–World War II "baby boom" generation is now in its thirties and forties. In two decades those in this group will approach retirement age. This trend, coupled with increasing life expectancy and a relatively small population of youth and young adults, will cause profound changes in the age profile in California and the nation.

The proportion of California's population over age 65 is expected to grow from 8.1 percent in 1970 to 14.4 percent in 2020. Over the same period, the proportion of the population under age 25 will slip from 47.4 percent to 34.9 percent, and the average age of the population will rise from 31 to 44 years (see Exhibit 7).

Exhibit 7

California's Population, by Age, 1970–2020



Source: California Department of Finance, Sacramento, November, 1988.

It is noteworthy that California's age distribution trends will vary somewhat from national trends in the proportion of youth and young adults. For example, by the year 2000, some 37.8 percent of California's population will be under age 25, in comparison to 33.9 percent for the nation.[9] For the most part, this can be attributed to the influx of immigrant populations and higher birthrates among a growing nonwhite population.

Growth of the Very Old

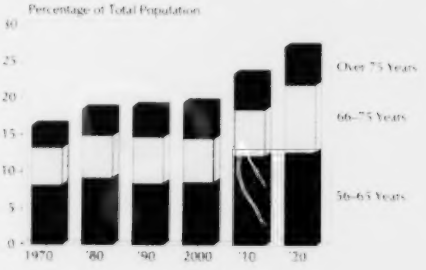
One of the most important population trends is the growth of the "very old" population. The proportion of persons over age 65 will grow dramatically, but the percent of those over 75 will grow even more. Between 1985 and 2000 the California population over 85 years of age will increase 81 percent compared to an increase of 59 percent for those aged 75 to 85 and 30 percent for those aged 70 to 74.[10] Projections from the California Department of Finance show that those over age 75 will expand from 3 percent of the population in 1970 to 5.2 percent in 2020. Subsequent years are expected to show even more dramatic increases in this age group (see Exhibit 8).

Growth of the over 75 age group stems from two principal causes. First and foremost, life expectancy is increasing because of better health standards and medical care. Second, large age groups are aging. This second factor will not really have its full impact until 2040, when the baby boom generation begins to reach age 75. For the most part, growth of the over 75 age group over the next three decades will come primarily from increasing longevity.

Growth of the "very old" population because of increased longevity may be greater than indicated by the government's projections. A recent study conducted by the National Institute of Aging and the University of Southern California indicates that life expectancy may be increasing far more rapidly than the Bureau of Cen-

Exhibit 8

California's Population over Age 55, 1970–2020



Source: California Department of Finance, Sacramento, November, 1988.

9. *Statistical Abstracts of the United States, 1988.* Washington, D.C.: Bureau of the Census, 1988, Table 16, p. 15.

10. *Population Projections for California Counties, 1980–2020, with Age and Sex Detail to 2020.* Sacramento: California Department of Finance, 1983.

sus estimates (see Exhibits 9 and 10). This study draws on recent data showing a surge in longevity and postulates that healthier life-styles and medical advances are leading to a 2 percent annual increase in life expectancy. The study predicts that the average life expectancy in the year 2040 will be five to eight years longer than the most optimistic census projections. The implications for future growth of the over 75 and over 85 age groups is earthshaking. Specifically, in the year 2040, there will be 29.6 percent or 19.8 million additional persons over age 65; and 83.2 percent or 10.7 million more persons over age 85.[11]

Exhibit 9

Projected U.S. Life Expectancy Ages by 2040

Source of life expectancy projection	Ages	
	Male	Female
Census Bureau (high mortality)	72.7	80.3
Census Bureau (moderate mortality)	75.0	83.1
Census Bureau (low mortality)	77.8	86.7
NIA-USC Estimate (very low mortality)	85.9	91.5

Source: Ethel Percy Andrus Gerontology Center, University of Southern California, Los Angeles, 1988.

Exhibit 10

Projected Life Expectancy for the Population over Age 64 in the Year 2040

Life expectancy projection	Percent over age 64
Census Bureau (moderate mortality)	
65 through 74 years of age	43.7
75 through 84 years of age	37.1
85 years of age and over	19.2
NIA-USC Estimate (very low mortality)	
65 through 74 years of age	37.0
75 through 84 years of age	36.0
85 years of age and over	27.1

Source: Ethel Percy Andrus Gerontology Center, University of Southern California, Los Angeles, 1988.

11. Jack M. Guralnik, Machiko Yanagishita, and Edward L. Schneider, *Projecting the Older Population of the United States: Lessons from the Past and Prospects for the Future*, Los Angeles: Ethel Percy Andrus Gerontology Center, University of Southern California, 1988.

Life Cycle Trends

Increases in longevity, coupled with retirement policies encouraging even earlier departures from work, and expansion of educational opportunities during youth are producing a progressively rigid lockstep from education in youth, to work in mid-life, and finally to retirement in old age (see Exhibit 11).

The expansion of school years during youth and years for retirement in the later part of life have compressed the number of years given to work into a smaller and smaller portion of the life span.[12] Specifically, the proportion of the total life span given to work in the mid-years by the average male declined from 62.3 to 55.4 percent between 1940 and 1980.

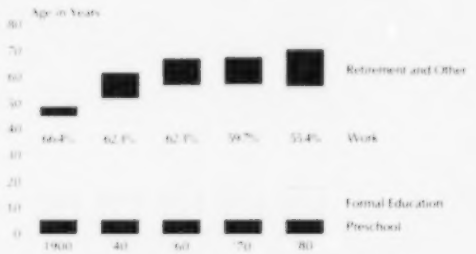
The compression of work into a smaller and smaller portion of mid-life has intensified dramatically over the last 50 years. While long-established trends are generally the best predictor of the future, they can also point to a breaking point. Many of the economic and social forces that fostered this life pattern no longer exist.[13] New social forces such as changing family life, new values toward work and leisure, the need for recurrent education throughout life, and the mounting economic costs of today's retirement policies may push individuals and society into new life patterns that more flexibly mix education, work, and leisure through all stages of life.[14]

Implications for Adult Education

The changing age profile of California's population has important implications for adult education. First, our aging population will increase the share of resources required for retirement pensions and health care. These mounting costs will generate fierce competition among generations for economic resources. Education, including adult education, may be progressively challenged for resources. Further, changing age

Exhibit 11

Lifetime Distribution of Education, Work, and Leisure for U.S. Males, 1900–1980



Source: Work life expectancy figures (number of years in labor force) obtained from Howard N. Fullerton and James J. Byrne, "Length of Working Life for Men and Women, 1970," *Monthly Labor Review* (February, 1976), pp. 31–33; Howard N. Fullerton, "A Table of Expected Working Life for Men, 1968," *Monthly Labor Review* (June, 1971), pp. 49–54; and *Statistical Abstracts of the United States, 1988*, Bureau of the Census, 1988, Table 606, p. 364. Life expectancy figures (at birth) obtained from *Statistical Abstracts of the United States, 1974*, Bureau of the Census, 1975, p. 55, and *Statistical Abstracts of the United States, 1988*, Bureau of the Census, 1988, Table 107, p. 71. School years (completed for persons over 25) obtained from *Digest of Educational Statistics for 1975*, Washington, D.C., U.S. Department of Health, Education, and Welfare, Office of Education, 1975, pp. 14–15, and *Statistical Abstracts of the United States, 1985*, Bureau of the Census, 1985, Table 216, p. 136.

12. The data on lifetime distribution of education, work, and leisure have been restricted to males because the transitional status of women between employment and housekeeping does not allow development of meaningful summary statistics for both sexes.

13. Fred Best and Barry Stern, "Education, Work and Leisure: Must They Come in That Order?" *Monthly Labor Review* (July, 1978).

14. Fred Best, *Flexible Life Scheduling: Breaking the Education-Work-Retirement Lockstep*. New York: Praeger Publishers, 1981.

distributions will cause the proportion of working-age adults to decline relative to dependent children and retired persons. The "dependency ratio" of nonworkers to workers will decline from 1:6 in 1970 to 1:5 by 2020 and fall still further after that year. If living standards are to be maintained and the California economy kept strong, the working adult population must have full access to the education and training necessary to build competitive skills.

The changing age profiles of California and the nation are also likely to increase the demand for educational services to meet the needs of an aging and older population. Health, exercise, and preventive medicine courses are likely to be in greater demand. Perhaps more important, improved health and increased longevity, coupled with the need to develop new skills, are likely to intensify the need for guidance in changing careers and vocational retraining.

The emergence of the working woman as the norm rather than the exception has catalyzed fundamental changes in the families and the life-styles of most Americans.

Finally, California's changing age profile will impact the supply of teachers. Large portions of today's teachers are approaching retirement age.[15] Many elementary schools and high schools confront situations in which half their teachers may have to be replaced during the next decade.[16] These conditions are also likely to impact the supply of teachers for adult education. When attrition due to retirement is combined with the reluctance of today's younger generation to enter teaching,[17] adult schools may find it increasingly difficult to recruit and retain qualified teachers.

Changes in Family Life and Parenthood

The emergence of the working woman as the norm rather than the exception has catalyzed fundamental changes in the families and the life-styles of most Americans. On a national level, the percent of working-age women who participate in the labor force increased from 43.9 to 55.3 percent between 1972 and

15. Helen Cagampang and others. *Teacher Supply and Demand in California: Is the Reserve Pool a Realistic Source of Supply?* Berkeley: Policy Analysis for California Education, August, 1986.

16. *A Nation Prepared: Teachers for the 21st Century.* Washington, D.C.: Task Force on Teaching as a Profession, Carnegie Forum on Education and the Economy, May, 1986, p. 10.

17. Tom Hayden, "A Disquieting Survey of Recent Berkeley Graduates." Sacramento: *The Sacramento Bee,* February 25, 1987, p. B-9.

1986 and is projected to reach 61.5 percent by 2000. In comparison, the labor force participation rates of men were 76.3 percent in 1986 and are projected to be 74.7 percent in 2000.[18] Similar trends exist for the California population.

With the increase of women workers have come dual-earner families and a new calculus of living for both men and women. The 1970s and 1980s also gave rise to growing numbers of single-parent households, caused by separation of spouses or pregnancies during teen years. These trends are making life more complex and less flexible for a growing number of working-age Californians, a condition that has important implications for both the content and delivery of adult education.

Today's Families and Parents

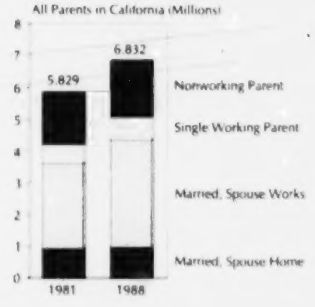
In 1987 there were 9.9 million households in California. Some 2.3 million of these were single households, 5.5 million were married couples with or without children, 0.9 million were single-parent households, and the remaining 1.2 million represented miscellaneous living arrangements. Some 3.8 million, or 38 percent of these households, included dependent children. Approximately 6.7 million, or 39 percent, of the 17.3 million Californians between the ages of 18 and 65 were parents of dependent children in 1987.[19]

Parenting, whether it be undertaken by men or women, is increasingly balanced against the demands of work. Parenting and occupations are pursued during the same stage of the life cycle, and most parents work. Some 5.1 million, or 74.4 percent, of all California parents with children under 18 worked in 1988. In 1981, the proportion of parents who worked was 72.5 percent, suggesting that the prominence of combined working and parenting is likely to increase further in coming years (see Exhibit 12).

It is also important to note that the spouses of most married workers are also employed. In 1988 some 78.5

Exhibit 12

Working Parents with Children Under 18 in 1981 and 1988



Source: Current Population Survey, California Department of Finance, Sacramento, March Supplements, 1981 and 1988.

18. Howard Fullerton, "Labor Force Projections: 1986 to 2000," *Monthly Labor Review* (September, 1987), p. 21.

19. Data applicable to California provided by the California Department of Finance and calculated from the *March, 1987, Supplement of the Current Population Survey*, Washington, D.C.: Bureau of the Census, U.S. Department of Commerce, 1987.

percent of all married workers had working spouses, up from 73.9 percent in 1981 (see Exhibit 13). With or without children, personal time and logistical constraints are greater when both spouses shoulder the responsibilities of holding a job.[20] Children clearly increase these constraints. In 1988, 73.3 percent of California's "dual earner" couples had children under age 18, and 29 percent had children under the age of 6.

Single Parents and Teenage Mothers

California has two growing subsets of families that merit special attention. These partially overlapping subsets are single-parent households and teenage parents. In 1987 California had 900,100 single-parent households. Single-parent households in the state grew from 8.5 percent in 1978 to 9.1 percent in 1987. About four-fifths of these single parents are women, and 80.1 percent are working. Over 40 percent of these working single parents have children under 12 years of age.[21]

Teenage parents who may be living with their own families or as single parents represent a small but important category of families. California is reported to have the second highest adolescent pregnancy rate in the nation.[22] Many of the babies born to these adolescent mothers are given up to adoption, but many of these young mothers become children with children. A disproportionate number of these mothers are from ethnic minority groups. They tend to earn incomes far below the average, and they commonly drop out of school.

Implications for Adult Education

California's changing patterns of family life have important implications for adult education. First and

Exhibit 13

California's Labor Force, by Marital Status and Employment of Spouse, 1988

Source: Current Population Survey, California Department of Finance, Sacramento, March Supplements, 1981 and 1988.

20. Howard Hayghe, "Families and the Rise of Working Wives," *Monthly Labor Review* (May, 1976), pp. 12–19; Fred Best, "Changing Sex Roles and Worklife Scheduling," *Psychology of Women Quarterly* (Winter, 1980); and Janet Zollinger Grele, "Changing Sex Roles and Family Structure," *Social Policy* (January–February, 1979).

21. These figures, provided by the California Department of Finance, have been developed through a special analysis of the *March, 1988, Supplement to the Current Population Survey*, Washington, D.C.: Bureau of the Census, U.S. Department of Commerce, 1988.

22. An estimated 14 percent of teenage girls become pregnant, and about one-fourth to one-third of these give birth to a child (*Mom, Dad, I'm Pregnant: A Special Report on Adolescent Pregnancy*. Sacramento: Senate Office of Research, California Senate, October, 1984, p. 3).

foremost, the logistical problems that confront working parents underscore the need for developing educational delivery systems that cater to adults who have limited flexibility for choosing the time and location of their studies. Parenting and work have become an increasingly simultaneous undertaking. Adult education, no matter how valuable it might be, will be useless to adults who must choose between attending such programs and holding a job or caring for their children. In addition to flexible scheduling and location of courses, new ways must be found to provide child care to parents who wish to participate in educational programs.

Second, the changing makeup of California's families has implications for the content of adult education. Teenage parents who have left school and taken adult responsibilities before they have adult skills will require intensive educational support for both basic skills and coping with their particular problems. Similar needs may also exist for "displaced homemakers" who become single parents. Courses on parenting and child care, as well as on domestic skills such as cooking and home maintenance, are also likely to be in demand among parents.

Work and Workers in Transition

Pushed by international competition and fueled by technological innovation, California is leading the nation into a postindustrial era of high-tech industries that offer a staggering diversity of services. This change is not occurring overnight; it is relentless. Just as the archetypal work setting has already moved from the work bench and factory floor to the office desk and telephone, tomorrow's work setting will include the microcomputer with a "desktop" screen and service desks supported by international information technology.[23] Today's workers must better prepare themselves to be productive in tomorrow's economy, and adult education will be a critical component in helping the workers with that task.

23. Fred Best, "Preparing California's Work Force for the Jobs of the Future," in *The World of Work Careers and the Future*. Edited by Howard Didsbury. Washington, D.C.: World Future Society, 1983.

Tomorrow's Employment Opportunities

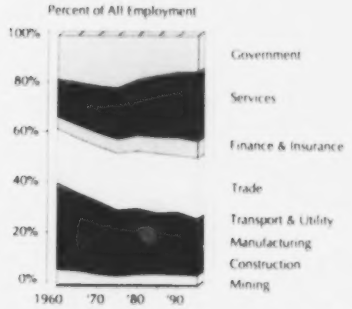
The goals of tomorrow will shift progressively to new industries and new occupations. Economic fluctuation will temper expectations, but barring major economic collapse, this shift will continue. Future changes may be accelerated by global economic forces and recent technological advances. However, they remain part of a long historic trend which moved workers first from the farm to the factory, then from the shop floor to the office, and now to work settings linked more by electronic systems than by halls and rooms.[24]

This long-term transition is reflected in state and national employment projections. The California work force has already left the farm. California remains an agricultural power because of technologically supported productivity, but scarcely 3 percent of the state's workers hold jobs in this sector. Technological changes coupled with international competition are also shrinking the ranks of the manufacturing work force. Specifically, manufacturing workers as a percentage of all workers declined from 26.9 percent in 1960 to 18.9 percent in 1985 (see Exhibit 14), and that proportion is projected to shrink to 17.6 percent by 1995. Service and information industries have been and will continue to be the growth sectors. Employment in the service sector is predicted to climb from 14.5 percent of the state's total employment in 1960 to 27.4 percent in 1995 (see Exhibit 14). Jobs in the service sector will vary tremendously, ranging from housekeepers to lawyers. Other growth sectors will include trade, finance, and insurance.

Occupations of employment will also shift to reflect the changing prominence of industries and the technologies used by industries. The greatest number of job openings will be created in professional and technical occupations. A combination of craft and factory occupations will represent the second largest number of

Exhibit 14

Distribution of Employment in California by Industry, 1960–1995



Source: California Statistical Abstracts, 1987. Sacramento: California Department of Finance, 1988, Table C-3, p. 24; and *Projections of Employment, 1985–1995.* Sacramento: California Employment Development Department, Employment Data and Research Division, 1988.

Note: These projections do not report agricultural and farm occupations, which provide jobs for approximately 3 percent of the work force.

24. Many social forecasters believe that we are moving away from office settings and toward "telecommuting" and "flexiplace" arrangements that feature linked computers and advanced telecommunications (Alvin Toffler, *The Third Wave*. New York: Bantam Books, 1980). While such arrangements may be important models of long-term changes, change in the future is likely to focus on an increasingly sophisticated "electronic office" (Fred Best, "Technology and the Changing World of Work," *The Futurist* (April, 1984), pp. 61–66.

jobs, but this sector will grow at a much slower rate than professional and technical jobs. Service occupations come third in total job creation, but this sector will grow at a much faster rate than crafts and factory occupations (see Exhibit 15).

Exhibit 15

Distribution of Employment in California by General Occupational Groups, 1985–1995

Occupational group	Number of Jobs 1985	1995	Percent change
Professional and Technical	2,245,080	3,069,330	36.7
Managers and Officials	687,310	910,500	32.5
Sales and Related	1,201,680	1,603,900	33.5
Clerical and Support	2,373,020	2,904,390	22.4
Crafts and Trades	1,219,050	1,506,400	23.6
Operatives	1,155,770	1,397,700	20.9
Service Workers	1,592,840	2,157,470	35.4
Laborers and Helpers	386,330	483,370	25.1
Agricultural and Forestry	103,000	138,420	34.4
Total jobs/percent of change:	10,964,080	14,171,480	29.3

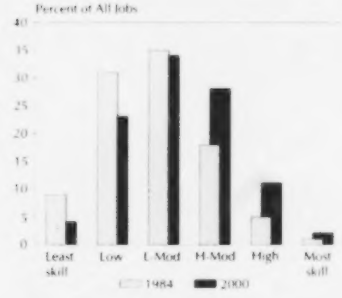
	Percent of total jobs	
Professional and Technical	20.5	21.7
Managers and Officials	6.3	6.4
Sales and Related	11.0	11.3
Clerical and Support	21.6	20.5
Crafts and Trades	11.1	10.6
Operatives	10.5	9.9
Service Workers	14.5	15.2
Laborers and Helpers	3.5	3.4
Agricultural and Forestry	0.9	1.0
Total percent:	100.0	100.0

Source: Projections of Employment, 1985–1995.

Note: These projections underestimate agricultural and farm occupations, which provide jobs for approximately 3 percent of the work force.

Exhibit 16

National Distribution of Jobs by Skill-Level Groups, 1984 and 2000



Source: Workforce 2000: Work and Workers for the 21st Century, Hudson Institute, Indianapolis, Ind., June, 1987, pp. 96–101.

Changing Requirements for Skills

California's changing occupational profile promises to increase the requirements of basic skills for most new jobs, and new technologies promise to alter the skills required within long-established occupations.

A recent national study conducted by the Hudson Institute for the U.S. Department of Labor found that the basic skills required for the growth occupations of the future will require significantly higher levels of basic education. The median number of years of education required for employment in the year 2000 will be 13.5 compared to 12.8 in 1984.[25] Specifically, 40 percent of the employment in 1984 was found in lower skilled occupations, and only 27 percent of the jobs in the year 2000 will be in lower skilled occupations. Conversely, 41 percent of the jobs in the year 2000 will be in higher skilled occupations compared to 24 percent in 1984 (see Exhibit 16).

The job skill requirements of the future will not only be higher but also different. New occupations are being created with new skill requirements. Further, new technologies and working conditions are shifting the job-specific skills within jobs that retain the same titles. For example, the occupational category of secretary has remained a fixture in offices across the nation. But the job and the skills required are not the same as they were 10, not to mention 20, years ago. Requirements have shifted from the use of ditto machines to photocopy machines, and recently from the use of typewriters to microcomputers with their many supporting software tools (see Exhibit 17).

Finding, let alone keeping, a job in the 1990s and in the twenty-first century will be like aiming at a moving target. Workers and the institutions that train them must maintain high standards and be up to date.

Displacement and Career Change

As in the past and present, many workers of the future will change jobs and careers. Some of these changes will be self-chosen, and some will result from economic forces beyond the control of the individual.

25. William Johnston and Arnold Packer, *Workforce 2000: Work and Workers for the 21st Century.* Indianapolis, Ind.: Hudson Institute, 1987, pp. 96–101.

Exhibit 17

Comparison of Skill Requirements for Secretaries from 1983 Survey of Employers and 1977 *Dictionary of Occupational Titles*

(Skills cited for secretaries, DOT Code 201.362-030)

Technical Skill Requirements	Percent positions filled	Percent firms surveyed
Data Cited from 1977 *DOT* Description		
*Typing (601002, 603000, 603014)	NA	NA
*Shorthand, Letter Dictation (604000)	NA	NA
*Use Electric Typewriter with Memory (617083)	NA	NA
*General and Specific Writing Skills (504000)	NA	NA
Record Minutes of Meetings	NA	NA
Mail, Screen Visitors, Scheduling (605000)	NA	NA
Information Management and Transfer	NA	NA
Transcription of Notes and Minutes	NA	NA
Maintain Records, Prepare Reports (60700)	NA	NA
Make Copies, Use Photocopy Machine (617089)	NA	NA
Data Cited from 1983 Survey of Employers		
*Typing (601002, 603000, 603014)	100.0	100.0
*Shorthand, Letter Dictation (604000)	73.3	50.0
*Use Electric Typewriter with Memory (617083)	73.3	25.0
*General and Specific Writing Skills (504000)	96.7	75.0
Filing, Sorting, Retrieve Documents (602009)	73.3	25.0
Cost, Output, Inventory Accounting (607310)	73.3	25.0
Use Telephones and Switchboards (618096)	3.3	25.0
Use Applied Computer Software (629000)	73.3	25.0

Source: Data are from text review of occupational descriptions from the *Dictionary of Occupational Titles*. Washington, D.C.: U.S. Department of Labor, 1977, p. 153. Survey data cited from exploratory random survey of 59 firms from the Los Angeles metropolitan area conducted during August, 1983 (Fred Best and Sherry Bell, *Labor Demand Forecasting for Los Angeles: Can Existing Systems Be Improved?* Los Angeles: Los Angeles Business Labor Council, 1983). A standard coding system was used to code data from both sources.

*Designates skill requirements cited by both the *DOT* and 1983 survey of employers.

The average American worker changes jobs some 12 times during his or her working life. Much of this change is internal change within the same organization or voluntary job change, from one employer to another. More cathartic changes take the form of involuntary job loss, either temporary or permanent. Intense concern about "displaced workers" during the 1980s led many to be concerned about similar problems in the future. Some of those expressing such concerns have postulated that automation and other forms of technological change will rampantly displace workers.

While one cannot state "iron laws" about future job displacements because of changing technology, economic history tends to refute this fear in most cases. Prevailing opinion is that technological displacement is an exception, rather than the rule. The root of this assumption is that technological innovation allows workers and firms to produce greater amounts of better quality goods and services at lower costs. Firms can therefore sell products at lower prices, which causes consumers to buy more. This in turn requires employers to hire more workers to produce more. For example, after Henry Ford initiated the use of assembly line technology in his auto plants, he was able to reduce the work time required to produce a new car by 56 percent between 1910 and 1920. This led to a 62 percent reduction in the price of his cars to consumers. Buyers who previously could not afford a car flocked to his showrooms. Sales increased to ten times their previous levels, and employment in the Ford Motor Company grew from 37,000 to 206,000 workers in just ten years.[26]

In today's world, loss of jobs generally stems from a lack of economic competitiveness, in many cases on an international scale. For the most part, the absence or presence of significant job displacement in future years is likely to be determined by whether we are able to train skilled and motivated workers and then provide them with the technology to be competitive.

26. Richard Vedder, *Robotics and the Economy*. Washington, D.C.: Staff Study, Subcommittee on Monetary and Fiscal Policy, Joint Economic Committee, U.S. Congress, March 26, 1982, p. 26.

The Emerging Labor Shortage

On a national level, demographic trends have caused a concern about growing shortages of entry-level labor in coming decades. The basis of this concern is that the age group following the large baby boom generation is smaller in number. As a result, there will be fewer entry-level workers in coming years. For California, however, the demographic causes of labor shortages are not as alarming. Coming years will see a clear dip in the number of entry-level workers, but the impact on the labor supply will not be as serious, because immigration and high birthrates among the nonwhite population have contributed to a younger age group that is larger than the national average (see Exhibit 7).

Unfortunately, California is likely to experience another form of labor shortage: a lack of workers with skills to perform jobs. A disproportionate number of California's youths come from minority and immigrant backgrounds and are deficient in English and other basic skills required for most jobs. Thus, the California economy will likely confront a shortage of skilled workers, not a shortage of people wanting work.

If tomorrow's adult population does not have adequate skills, adult education will be one of the primary vehicles for upgrading the work force to meet economic needs.

Implications for Adult Education

Changes in the labor market and the world of work have powerful implications for adult education. First and foremost, study after study indicates that the level of basic skills required for most jobs of the future will be significantly higher than it is today. If tomorrow's adult population does not have adequate skills, adult education will be one of the primary vehicles for upgrading the work force to meet economic needs.

Second, a shifting occupational and industrial structure coupled with significant changes in skill requirements within established occupations indicates that adults will have to update their skills continually.

Third, ongoing voluntary career changes and the specter of unemployment will foster the need for significant "retooling" on the part of many workers. In some cases, this may require a major retraining effort. In other cases, perhaps for the majority of job-changing

adults, this will require educational services such as career education, job-search training, and targeted job training based on individual assessment.

Polarities of Education and Skills

In general, the educational attainments and skill levels of the California population are on a par with those of the national population. Average educational attainment for both the nation and the state is about 12.5 years of education for adults over the age of 25 years,[27] with some indications that California leads the nation in certain areas of educational achievement.[28] At the same time, there are sobering indications that an alarming proportion of the California population beyond the kindergarten through grade twelve years is seriously lacking in the basic skills needed to be productive and self-sufficient.

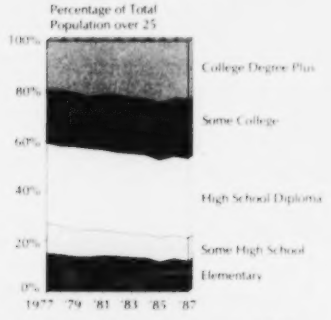
An Overview of Educational Achievement

The general trend of educational attainment in the state is upward. In 1977 some 14.8 percent of adults over age 25 had completed no more than eight years of school. By 1987 this group had declined to 11.9 percent. At the other end of the educational spectrum, 23.5 percent had completed four years or more of college in 1987 as compared to 19.5 percent in 1977 (see Exhibit 18).

However, educational attainment has not been equal among California's population. Most notably, there are significant long-term differences among ethnic and racial groups. On average, Hispanics commonly fail to complete junior high school, while other ethnic-racial groups average more than a high school education. Whites, Asians, and blacks are roughly equal in school advancement, completing between 12 and 13 years of school in recent years. Asians and blacks have consistently been second and third among these three groups.

Exhibit 18

Distribution of Educational Attainment Among California's Population over Age 25, 1977–1987



Source: Data are from the *March, 1988, Supplement to the Current Population Survey,* Washington, D.C.: Bureau of the Census, U.S. Department of Commerce. Data provided courtesy of the Population Research Unit, California Department of Finance, Sacramento, November, 1988.

27. Estimates for California come from breakdowns of recent data in the *Current Population Survey,* Washington, D.C.: Bureau of the Census, U.S. Department of Commerce, and were provided by the California Department of Finance. National data are cited from *Statistical Abstracts of the United States, 1985,* Washington, D.C.: Bureau of the Census, U.S. Department of Commerce, 1985, Table 201, p. 125.

28. For example, the 1980 Decennial Census data indicated that 42 percent of the California population over age 25 attained more than four years of high school as compared to 31.9 percent for the rest of the nation. *Statistical Abstracts of the United States, 1985.* Washington, D.C.: Bureau of the Census, 1985, Table 215, p. 135.

Hispanics, on the other hand, have consistently lagged far behind the other ethnic-racial groups. In contrast to other groups, Hispanics consistently averaged between 9 and 9.6 years of school completed during the 1977–1987 period. While the trend for Hispanics has been consistently upward, their educational achievement is far below that of the rest of the state (see Exhibit 19).

The educational gap between Hispanics and the rest of the state is dramatized by comparing benchmarks of achievement. Some 50.9 percent of Hispanics over age 25 have not completed high school compared to 21.1 percent of the state's total adult population. Almost half of the total population has completed at least some college compared to only 20 percent among Hispanics (see Exhibit 20).

Number of years of completed educational "seat time" is not necessarily the bottom line on real educational achievement. However, the gap of school years completed between Hispanics and the total population suggests serious skill handicaps among this group.

Basic Educational Deficiencies

The above overview of educational attainment suggests the scope of basic educational deficiencies. In 1987 some 21.1 percent of the total state population over age 25 had not completed high school, and 11.9 percent had no more than an eighth grade education (see Exhibits 18 and 20). In absolute numbers, this translates to 3.5 million adults without a high school diploma and 2 million with no more than eight years of schooling.

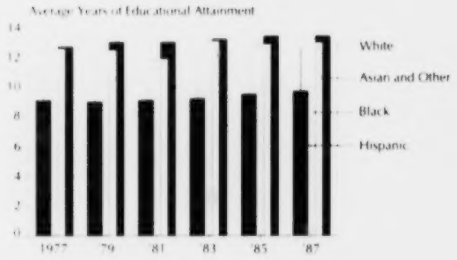
Fewer Hispanics finish high school than students from other ethnic groups. Over half of California's 3.3 million Hispanics over age 25 had not completed high school in 1987 (see Exhibit 20).

As noted above, the number of years of education does not necessarily equate to actual learning and skills. However, it is a reasonable indicator of educational achievement. Realistically, many who have left high school without a diploma have the skills and knowledge expected of a high school graduate.[29]

29. David Stern and others. *Reducing the High School Drop-Out Rate in California*. Berkeley: University of California, California Policy Seminar, Institute of Government Studies, 1986, pp. 26–27.

Exhibit 19

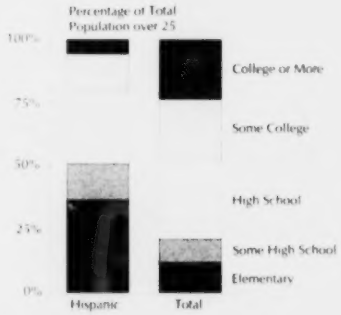
Average Years of Education Among California's Ethnic-Racial Groups over 25 Years of Age, 1977–1987



Source: Data are from the *March, 1988, Supplement to the Current Population Survey,* Washington, D.C.: Bureau of the Census, U.S. Department of Commerce. Data provided courtesy of the Population Research Unit, California Department of Finance, Sacramento, November, 1988.

Exhibit 20

Comparison of Levels of Educational Attainment by California's Hispanic and Total Populations over 25 Years of Age, 1987



Source: Data are from the *March, 1988, Supplement to the Current Population Survey,* Washington, D.C.: Bureau of the Census, U.S. Department of Commerce. Data provided courtesy of the Population Research Unit, California Department of Finance, Sacramento, November, 1988.

Conversely, many who receive high school diplomas do not have the skills for which they have been certified. In sum, it seems realistic to assume that the number of persons who have not completed 12 years of school roughly reflects the number of Californians who have some basic educational deficiencies, and the number with no more than eight years of schooling have serious basic educational deficiencies. Under these assumptions, about 21 percent, or 3.5 million, of California's adults are currently potential students for adult basic education.

Will the proportion of adults with basic educational shortcomings increase or decrease? There are no definite answers to this question. However, it is possible to look at the sources of basic educational deficiencies among adults and speculate about their prominence in the future.

There are two major causes of basic educational deficiencies. First, children and youth may, for a variety of reasons, drop out of school or fail to learn while in school. Large portions of these "youth-at-risk" ultimately become "adults-at-risk" with basic educational deficiencies. Second, immigrant adults and their children frequently do not have formal educations gained in their native countries, and when they have, they may still have language handicaps and problems learning English. The scope of basic educational deficiencies stemming from difficulties with English as a second language will be discussed in the next section.

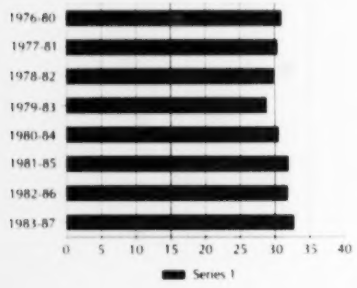
Current trends indicate that unsuccessful completion of schooling through grade twelve is likely to continue as a cause of adults' basic educational deficiencies. Statewide high school attendance rates, while not a perfect indicator, do provide a reasonable measure of the dropout problem. Between 1980 and 1987, the percent of students entering ninth grade who failed to complete twelfth grade fluctuated, but essentially inched up from 31 percent for the 1976–1980 period to 32.7 percent for the 1983–1987 period (see Exhibit 21).

While some school-age youth who leave school or fail to earn a high school diploma at age 18 return for a general educational development (GED) or other

Exhibit 21

Attrition Rates in California's Public Secondary Schools, 1976–1987

(Percent of Starting Ninth Graders Who Did Not Earn a Diploma)



Source: California Basic Educational Data System, California Department of Education, Sacramento, November, 1988.

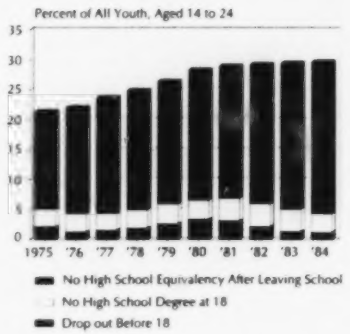
equivalency certification before age 24, most do not. State GED and other equivalency degree records indicate that over the six-year period after high school graduation, only a very small number of students obtain equivalency degrees (see Exhibit 22).

High school attendance rates indicate a persistence, if not an increase, in dropouts. Available data indicate that students who drop out do not commonly complete their high school educations. Further, dropout rates, coupled with the general failure of dropouts to earn diplomas in later years, has a cumulative impact on adults' educational deficiencies. Year after year, the percentage of post–high-school-age youth with less than high school educations continues to mount (see Exhibit 22). Unless a significant turnaround is achieved, the proportion of adults over 25 years of age with some measure of basic educational deficiency is likely to remain constant or grow.

Exhibit 22

California Youth Out of School and Failing to Earn a High School or Equivalent Diploma

(Dropouts and Non-Completers, Percent of Population Ages 14 to 24)



Source: Tomorrow's Workers at Risk. Sacramento: Youth Subcommittee, California State Job Training Coordinating Council, 1986, p. 12.

The Scope of Illiteracy

Illiteracy, which can result from educational failures in kindergarten through grade twelve or from problems associated with shifting to English-as-a-second-language (ESL) programs, is a significant problem for California. In a 1987 study conducted by SRA Associates, it was estimated that 15 percent, or 3.1 million, of California's 20 million residents over age 14 had "significant literacy performance deficiencies."[30] Not surprisingly, these estimates, which were based on a previous literacy assessment survey, indicated significant variations of illiteracy among ethnic and racial groups. Specifically, some 23.9 percent, or 890,121, of the 3,724,355 Hispanics over age 14 were estimated to have literacy deficiencies. Some 26.5 percent of blacks and 28.3 percent of Asians were also estimated to have similar levels of deficiency. While only 9.8 percent of whites had literacy deficiencies, they constituted the largest absolute numbers of illiterate persons (see Exhibit 23).

30. Donald Dixon, Merrill Vargo, and Davis Campbell, *Illiteracy in California: Needs, Services and Prospects.* Paper prepared for the California Department of Education. Sacramento: SRA Associates, July, 1987, pp. 23–33.

Exhibit 23

California's Population over Age 14 with Significant Literacy Deficits, by Ethnic-Racial Category, 1987

Ethnic-racial group	Total population over 14	Number with literacy deficit	Percent with literacy deficit
White	13,545,153	1,327,425	9.8
Hispanic	3,724,355	890,121	23.9
Asian and other	1,646,628	464,349	28.2
Black	1,484,592	393,413	26.5
Total/percent:	20,400,728	3,075,308	15.1

Source: Donald Dixon, Merrill Vargo, and Davis Campbell, *Illiteracy in California: Needs, Services and Prospects.* Sacramento: SRA Associates, 1987.

Using the data from *Illiteracy in California* as a base assumption of the proportion of ethnic-racial groups that are likely to have literacy problems, it is possible to make rough projections of the future size of California's illiterate population on the basis of expected ethnic-racial proportions of future populations. These speculative calculations show that projected shifts in the distribution of ethnic-racial groups could cause the proportion of the California population over age 14 who have literacy deficiencies to increase from an estimated 15.1 percent in 1987 to 18.6 percent in 2020. In absolute terms, this would mean that some 4.2 million persons would have literacy deficiencies in the year 2000 and that this group could increase to 5.8 million by 2020 (see Exhibit 24).

While the projections in Exhibit 24 are not methodologically sophisticated, they are based on sound and, for the most part, conservative assumptions. Unless immigration into the state drops off dramatically in coming years, illiteracy in California may well approach 20 percent as the state moves through the early decades of the twenty-first century.

Implications for Adult Education

Trends concerning educational attainment and skill deficiencies among the state's population have very important implications for adult education. First and

foremost, a significant portion of California's adult population is ill prepared for citizenship or employment. Persons in this population group will be highly dependent on adult education programs if they wish to improve their skills.

Second, overcoming illiteracy and learning English are critical needs for hundreds of thousands of California residents. Whether the study of adult basic education or English is voluntary or required by statute, there can be little doubt that the demand for such instruction will be the critical issue for adult educators for years to come.

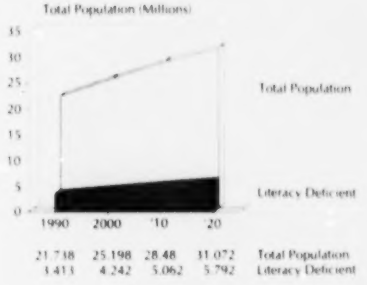
Third, the dropout rate in kindergarten through grade twelve will have serious impacts on the future of the state. Effective coordination among the elementary, high school, and adult education systems will likely be necessary to facilitate continued education to reduce the dropout rate and "retrieve" those who do drop out.

The level of literacy deficiency ensures that the Immigration Reform and Control Act (IRCA) will immediately and significantly affect the adult education system. The long-run implications and opportunities of this legislation will be discussed shortly.

Finally, the lack of adequate skills, whether they be basic or job-specific, among significant groups in the population is a serious threat to our economy. New approaches must be developed to work with employers to eliminate deficiencies in skills.

Exhibit 24

Estimated Number of Persons over Age 14 with Literacy Deficiencies Compared to California's Total Population, 1990–2020



Source: Projections calculated with census data using estimates of literacy deficiencies provided in Dixon, Vargo, and Campbell, *Illiteracy in California.*

New Public Policy Initiatives

Two recent public policy initiatives are likely to turn a latent need for adult basic education and English-as-a-second-language programs into an actual demand for services. The Immigration Reform and Control Act and the state's Greater Avenues for Independence (GAIN) welfare reform program are likely to increase participation in adult education programs among Californians with educational deficiencies.

GAIN Welfare Reform Program

The GAIN program requires all recipients of aid to families with dependent children (AFDC) who have

children over 6 years of age to undertake active job searches or training that will ultimately make them employable.

The GAIN program has gotten off to a slow start. However, future expansion of the program is likely to mandate the participation of many AFDC recipients in adult education programs. Upon entry into the program, GAIN participants are given an appraisal to determine whether remedial education is needed. Analysis of appraisal scores shows that about 40 percent of early participants require some type of remedial study. For the 1987-88 program year, the California Department of Social Services reported that 68,383 welfare recipients' educational needs were appraised. Approximately 20,000 of these early participants were placed in educational programs, one-fourth of whom were assigned to ESL programs and the remainder to adult basic education programs. The department also reported that about 6,000 voluntary GAIN participants took "upper-end" educational programs at state universities and community colleges.

How many GAIN participants will ultimately use adult education? About 600,000 California families draw benefits from the AFDC program.[31] The California Department of Social Services reports that about 60 percent of those recipients are "GAIN eligible" and that federal welfare reform statutes may enlarge this number. However, given the complexities of implementing the program, the department expects only 130,000 participants by the 1991-92 program year. If past appraisal and participation patterns hold true for the future, it seems reasonable to expect an influx of between 40,000 and 60,000 participants in adult education as a result of GAIN.[32]

IRCA Immigration Amnesty Program

The Immigration Reform and Control Act, the second public policy initiative of interest, is likely to have far greater, but less lengthy, impact on adult education.

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31. *Statistical Abstracts of the United States, 1985,* 1988, Table 640, p. 380; *California Statistical Abstracts, 1987,* Table E-15, p. 79.

32. *GAIN Appraisal Program II: Second Report,* The CASAS System, San Diego, November, 1987.

IRCA provides a "window of opportunity" for illegal immigrants, most of whom are from Mexico, to become U.S. citizens. The naturalization process requires minimal adult instruction, primarily in ESL programs and programs of rudimentary citizenship orientation.

The demands to be placed on adult education by IRCA promise to be significant. Conservative estimates of illegal immigration into California are in the neighborhood of 60,000 persons per year, although the actual influx from this source is likely to be higher.

Nationwide, 2,549,087 persons applied for residential amnesty before the IRCA-imposed cutoff date in 1988. Some 1,762,134 applied under the provisions for amnesty for illegal aliens. The rest applied under provisions for agricultural workers. About 1.4 million of these applications were made in California, and half of these applicants were from metropolitan Los Angeles. Seventy percent of the applicants had little or no English ability, and an estimated one-fifth had little or no literacy in their native languages.[33]

The Department of Education estimated that adult education enrollment resulting directly from IRCA would be 780,000 in 1988, would peak at 982,000 in 1989, and then drift downward to somewhere between 240,000 and 480,000 after 1989. A large part of the post–1989 IRCA enrollment was expected to be immigrants who learned about available educational services and voluntarily chose to pursue learning beyond the basic IRCA requirements.

IRCA is likely to have significant long-term impacts on California's adult education system, particularly as previously cautious and mistrustful immigrant families gain trust in the system and confidence in their own residential citizenship status. However, it is too early to predict the real scope or nature of these long term impacts.

Special Groups and Trends

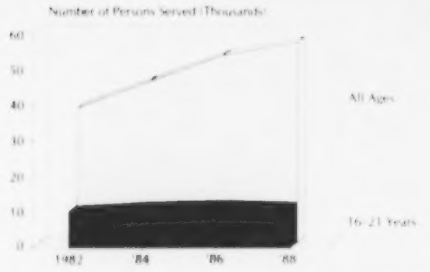
It is important to mention two client groups that have been and are likely to be continuing users of adult

33. Roger E. Olsen, "Immigration Reform and Control Act (IRCA) of 1986 and Implications for Adult Education," *OnLine*. Washington, D.C.: American Association of Adult and Continuing Education, Vol. 6, pp. 2–3.

education. These include the disabled adult population and the prison population.

Exhibit 25

Persons Served by the California Department of Developmental Services, 1982–1988



Source: California Department of Developmental Services, November, 1988.

Health and Disabled Adults

The California Department of Developmental Services (DDS) reports that it has 56,675 developmentally disabled clients, 45,520 of whom are over the age of 22. The department claims that this number represents the large majority of developmentally disabled persons in the general population. These persons reside in state hospitals, community care centers, or private homes. Four out of five are considered ambulatory or able to care partially for themselves

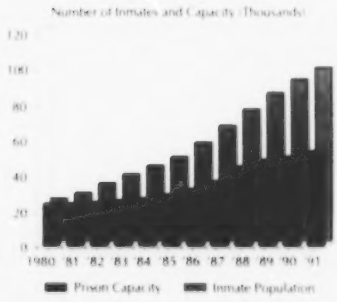
The number of developmentally disabled persons receiving services from DDS has increased a dramatic 49 percent since 1982, when the Department began keeping comparable statistics (see Exhibit 25). The likely explanation is that the developmentally disabled population is becoming more aware of the available services. Contributing to this trend is the increasing number of special education students who leave school and continue to receive services from DDS.

The decision by the state to move more of the developmentally disabled population from state hospitals to community care facilities will increase the demand for educational services for this group. In order to live and survive in these less structured community facilities, these individuals will need to learn more functional living and self-care skills.

General health issues may also require health and safety instruction within certain communities. The increasing costs of medical care and health insurance may foster a demand for classes dealing with preventive health care. Additionally, the continued growth of AIDS may require public instruction on this modern-day plague.

Exhibit 26

Size of State Prisons' Inmate Population and Prison Capacity, 1980–1991



Source: Changes in Corrections: 1986–87, Annual Report. Sacramento: California Department of Corrections, 1987, p. 8.

Prison Populations

California's prison population has grown much faster than the state's population. The state prison system had 64,737 inmates in 1987 and is projected to have 97,710 by 1991. In contrast, prison capacity is scarcely over half the size of the inmate population (see Exhibit 26).

Beyond incarcerated inmates, the Department of Corrections also has custodial responsibility for parolees, jurisdictional placements, and other prisoner classifications, which amounted to an additional 63,261 in 1988.[34] Available information indicates that over half the inmates did not graduate from high school and require remedial education if they are to have a chance at rehabilitation. The growth of state, county, and California Youth Authority prison populations suggests expanding demands on adult education from these groups.

III. Implications for Adult Education

Powerful economic, social, and demographic forces will push California's adult education system to find new and more effective ways of balancing mounting demands for English and basic skills with demands for programs that meet adults' interests beyond basic skills.

Demographic, social, and economic forces are shaping the future environment and clientele of California's adult education system. Eight key forces have been reviewed in this document:

1. Population growth
2. Racial and ethnic pluralism
3. The aging population
4. Changes in family life and parenthood
5. Work and the labor force
6. Education and skills
7. New public policies
8. Special groups and trends

These forces will determine the numbers and categories of persons to be served. They will also affect the types of instruction to be provided and the ways in which services are delivered. The implications of these forces for adult education are summarized below.

Implications of Population Growth

The population of California will continue to grow, in some counties at remarkable rates. The implications for adult education are as follows:

34. "Education and Inmates Programs," a verbal briefing, Sacramento: California Department of Corrections, October, 1988.

- **Serve larger populations.** California's growing population clearly means that adult education will have to serve larger populations. This will require more teachers, facilities, and other resources.
- **Respond to rapid and uneven growth.** In the case of small but rapidly growing counties, high growth rates may pressure adult schools to expand and adjust their programs to meet the demands of changing and larger populations.

California's population is changing in composition as well as in size. These changing population characteristics have far greater implications for adult education than size.

Implications of Ethnic and Racial Pluralism

California's ethnic-racial profile is changing rapidly. In the future, no ethnic-racial group will be a majority. There are two direct implications for adult education:

- **More flexible delivery systems that accommodate cultural diversity.** The growing diversity in the racial-ethnic composition of the population will create new demands for effective and flexible methods for delivering adult education services. Bilingual teaching is likely to be in increasing demand, and teachers and programs must be more sensitive to cultural differences.
- **A second language for English-speaking persons.** California's growing cultural pluralism may cause many native English-speaking persons to study a second language.

Large differences in basic educational achievement among the various ethnic-racial groups and high rates of deficiency in English among Asians and Hispanics will also impact adult education. These impacts will be discussed in a later section dealing with skills and English proficiency. Another impact will stem from the massive effort to provide legal status to specified immigrant groups under the Immigration Reform and Control Act. This will also be discussed later.

Implications of an Aging Population

California's population is getting older. This change will affect the types of instruction that will be in demand and the general environment surrounding adult education.

- **Conflict over resources.** The costs of public and private pensions, coupled with the mounting costs of health care, are likely to foster competition for resources among different generations. Education, including adult education, may be progressively challenged for resources.
- **Need for economic productivity and a skilled work force.** Age distribution in the future will cause the proportion of working-age adults to decline relative to dependent children and retired persons. If living standards are to be maintained and the California economy kept strong, the working adult population must have full access to the education and training necessary to develop and update competitive skills.
- **Classes for the older populations.** Changing age profiles will increase the demand for educational services for older persons. Health, exercise, and preventive medical care courses are likely to be in greater demand.
- **Instructional methods and delivery.** Older students, particularly the very old, may require special systems of educational delivery such as transportation services and mobile classrooms.
- **Career counseling and vocational training for older adults.** Increasing longevity and health, coupled with financial needs, may cause many preretirement-age persons to undertake new careers rather than retire. This may intensify the need for courses that provide guidance in career-change and vocational retraining.
- **Shortage of adult education teachers.** Many of today's teachers are approaching retirement age. When attrition from retirement is combined with the reluctance of today's younger generation to enter teaching, adult schools may find it increasingly difficult to recruit and retain qualified teachers.

The "graying" of the national and California populations is one of the major transformations of our time. Year by year, it will gradually lead to shifts in the priorities of adult education.

Implications of Family Life and Parenthood

The rise in the numbers of working and single parents has important implications for adult education:

- **Accessibility of adult education.** The temporal and logistical constraints that confront single and working parents make it necessary to develop delivery systems that cater to adults who have limited flexibility in choosing the times and locations of their studies. Child care, alternative scheduling, multiple training sites, decentralized educational technologies, and other delivery innovations will be particularly important.
- **Classes on parenting and domestic skills.** The changing face of California's families also has implications for the content of adult education. Teenage parents who have left school and assumed adult responsibilities before they have adult skills will require intensive educational support for both basic skills and for coping with their particular problems. Courses on child care and domestic skills such as cooking and home maintenance are also likely to be in demand among parents from all walks of life.

No matter what the course of study, delivery will be an important issue for today's parents. Even the finest adult courses will be useless to parents who must choose between attending classes or neglecting their children or jobs.

Implications of Work and the Labor Force

Changes in the labor market and the world of work will also affect the future of adult education:

- **Need to increase the skills of adult workers.** The skills required for most jobs of the future will be higher than those required today. If tomorrow's adult population does not have adequate skills, adult education systems will be one of the primary

vehicles for upgrading the work force to meet economic needs.

- **Need for recurring job training.** A shifting occupational and industrial structure coupled with significant skill requirement changes within established occupations indicates that adults will have to continually update their skills.
- **Resources to help workers cope with career change and job displacement.** Voluntary career changes and involuntary job displacement will foster the need for retraining for many workers. For some, this may require major educational efforts. In other cases, it will require educational services such as career education, job search training, and targeted job training based on assessment of individuals.

Capitalizing state-of-the-art vocational training facilities may or may not be feasible or desirable. However, adult schools are likely to play a major role in the areas of assessment and career planning.

Implications of Educational Success and Failure

Trends concerning educational attainment and skill deficiencies point to serious problems and important roles for adult education:

- **Need to combat illiteracy.** Hundreds of thousands of Californians need to learn how to read, write, and speak English. There can be little doubt that the demand for such instruction will be the critical requirement for adult educators for years to come.
- **Basic education for adults who dropped out.** The dropout problem through grade twelve will have a serious impact on California's future. Effective coordination among the elementary, high school, and adult education systems will likely be necessary to keep students in school and retrieve those students who drop out. Current trends also indicate that adult education will be called on to provide basic education and educational certification for adults who dropped out in earlier years.
- **Need to upgrade skills of adult labor force.** A significant portion of California's adult population does not

have the basic skills for productive employment. Others lack adequate job-specific skills. The careers of these persons and the economy of the state will be highly dependent on adult education programs.

Waves of immigrants whose verbal English skills are limited and a backlog of adults without basic educational skills will place demands on systems of adult education to provide a critical foundation of education for hundreds of thousands of adults.

Implications of New Public Policies

Two recent public policy initiatives will interact with other social and economic forces to increase the demands placed on adult education:

- **Literacy and basic education for the Greater Avenues for Independence (GAIN) program.** Current trends indicate that only a small portion of eligible AFDC recipients will participate in the basic education components of the GAIN welfare reform program. Nonetheless, adult education must be prepared for added students from this source and for program compliance requirements.
- **Short-term mobilization.** Short-term literacy and basic education must be provided for a one-time "balloon" group of approximately 900,000 persons during 1989-90. This will require a staff recruitment organization and curriculum development.
- **Monitoring and planning post-IRCA adjustments.** The long-term impacts of the Immigration Reform and Control Act on adult education are unclear. Enrollment may return to levels similar to those of the pre-IRCA years, or IRCA students could continue to enroll in order to improve their skills beyond the minimum IRCA requirements. Trends and prospects should be monitored carefully.

Implications of Special Groups

Two special groups beyond those identified in the above discussion are likely to place increasing demands on adult education:

- **Prison inmates and parolees.** California's prison population is growing at a rate that is much faster

than that of the general population. Since so many parolees have deficiencies in basic skills, any hope of finding legitimate employment and cutting back recidivism depends heavily on providing them with a basic education. Hence, demand for such educational services from this group is growing rapidly.

- **Disabled adults.** The number of developmentally disabled citizens receiving state services increased 49 percent between 1982 and 1988. If this trend persists, these citizens will increase the demand for adult education services.

California's adult education system must make literacy and basic education programs accessible to a larger and increasingly diverse population of adults.

Providing services to special groups will always require the development of instructional methods and delivery techniques that effectively encourage and maintain participation. The growing number and diversity of services to be provided will therefore require particular attention to delivery systems.

The above eight sources of change indicate that California's adult education system must focus on two key missions. First and foremost, it must make literacy and basic education programs accessible to a larger and increasingly diverse population of adults. Second, it must provide a variety of special courses that will meet the needs and interests of adults in areas beyond basic education and literacy. The key challenge will be to balance these two important missions.

The need to negotiate a balance between basic and other types of education is not new. However, the task of monitoring this balance will be particularly difficult as adult education is called on to help reverse the mounting lack of basic skills in a work force that must reestablish the international competitiveness of our economy.

Publications Available from the Department of Education

This publication is one of more than 600 that are available from the California Department of Education. Other publications available from the Department that relate to adult education and foreign language instruction are the following:

ISBN	Title (Date of publication)	Price
Adult Education		
0-8011-0273-1	California Adult Education Handbook (1986)	$3.75
0-8011-0856-x	English as a Second Language Handbook for Adult Education Instructors (1990)	4.50
0-8011-0124-7	Establishing Parent Education Programs (1979)	2.25
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